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DEPARTMENT OF THE ARMY
TECHNICAL MANUAL

DEPARTMENT OF THE AIR
FORCE TECHNICAL ORDER

Rec'd by DA Cr. 310-41 (9 Aug '65)

TM 5-4119

TO 17-5BC-59

SAW, CIRCULAR WOODWORKING PORTABLE

115 OR 220 (AC OR DC) VOLT

1 PHASE, 25-60 CYCLE

7¼ INCH BLADE

BLACK & DECKER MODEL 260

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DEPARTMENTS OF THE ARMY AND THE AIR FORCE

JUNE 1953

AGO 4076B—May

615

SAW, CIRCULAR WOODWORKING PORTABLE

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United States Government Printing Office
Washington: 1953

DEPARTMENTS OF THE ARMY AND
THE AIR FORCE

WASHINGTON 25, D. C., 11 June 1953

TM 5-4119/TO 17-5BC-59 is published for the information and guidance of all concerned.

[AG 413.12 (7 Apr 53)]

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1. Scope

a. This manual contains instructions for operation and organizational maintenance of the portable electric saw for operating personnel, and instructions for field and depot maintenance of the portable electric saw for engineer maintenance personnel.

b. The appendix contains a list of current references, including supply manuals, technical manuals, and other available publications applicable to the portable electric saw.

2. Maintenance Allocation

See Maintenance Allocation Chart issued by Chief of Engineers.

3. Forms, Records, and Reports

a. *General.* Forms, records, and reports are designed to serve necessary and useful purposes. Responsibility for the proper execution of these forms rests upon commanding officers of all units either using or maintaining this materiel. It is emphasized, however, that forms, records, and reports are merely aids. They are not a substitute for thorough practical work, physical inspection, and active supervision.

b. *Authorized Forms.* Maintenance record forms listed and briefly described in (1) through (10) below will be used in the maintenance of this equipment.

- (1) *DD Form 110, Vehicle and Equipment Operational Record.* This form is used by equipment operators for reporting the accomplishment of daily preventive maintenance services, and for reporting any equipment deficiencies observed during operation.
- (2) *Standard Form 91, Operator's Report of Motor Vehicle Accident.* One copy of this form is kept with the equipment at all times. In case of an accident resulting in injury or property damage, Form 91 is filled out im-

mediately (or as promptly thereafter as is practical) by the operator.

- (3) *DA Form 464, Work Sheet for Preventive Maintenance and Technical Inspection of Engineer Equipment.* This form is used by personnel of the using organization and higher echelons for reporting the results of preventive maintenance services and technical inspections.
- (4) *DA Form 460, Preventive Maintenance Roster.* This form is used for maintaining an operating time record on the item of equipment, and for scheduling lubrication and preventive maintenance services at proper intervals.
- (5) *DA Form 478, MWO and Major Unit Assembly Replacement Record and Organizational Equipment File.* Major repairs or rebuilding, replacement of major unit assemblies, and accomplishment of equipment modifications are recorded on this form.
- (6) *DA Form 468, Unsatisfactory Equipment Report.* This form is used for reporting manufacturing, design, or operational defects in the materiel, with a view to correcting such defects; it is also used for recommending modifications of the materiel. Form 468 is not used for reporting failures, isolated materiel defects, or malfunctions of materiel resulting from fair wear and tear or accidental damage. Form 468 is not used to report issue of parts and equipment, or for reporting replacements and/or repairs.
- (7) *DD Form 6, Report of Damaged or Improper Shipment.* This form is used for reporting damages incurred in shipment.
- (8) *DA AGO Form 9-81, Exchange Part or Unit Identification Tag.* This form is used to accomplish the direct exchange of unserviceable for serviceable parts.
- (9) *DA Form 811, Work Request and Job Order.* This form is used to request work done by higher echelon organizations.
- (10) *WD AGO Form 867, Status of Modification Work Order.* This form is used to maintain records of all modification work performed on equipment.

Section II. DESCRIPTION AND DATA

4. Description

The portable electric saw (fig. 1) consists of a cast aluminum housing with pistol grip and built in trigger on-off switch. The

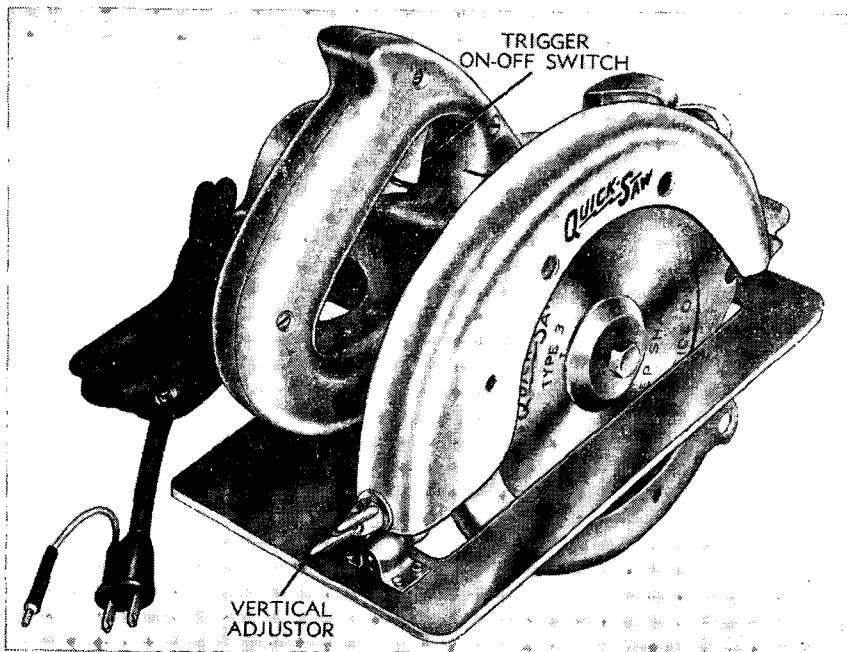


Figure 1. Right back three-quarter view of portable electric saw.

saw, which is mounted beneath a permanent guard, is capable of cutting two inch wood. Built in depth adjusters are located on the front and rear of the portable electric saw. A plate or saw shoe is connected to the motor housing, on one end by an adjuster and on the other, to the saw guard by a riveted plate.

5. Serial Number Information and Data Plate

The serial number information and data plate (fig. 2) is mounted on the left top side of the saw as it is held in an operating position. The plate contains the voltage, amperage, revolutions per minute, type, serial number, name of the saw and the name and address of the manufacturer.

6. Tabulated Data

Model	260
Voltage (ac or dc)	115 or 220
Amperage	10
Cycles	25-60
Speed (No Load)	4200 rpm
(Full Load)	2800 rpm

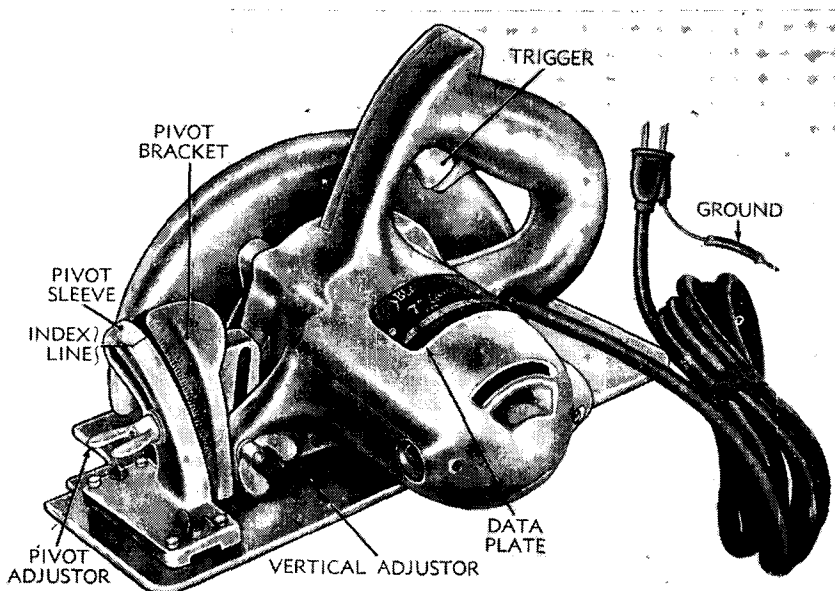


Figure 2. Left front three-quarter view of portable electric saw.

Capacity (cutting)

Front adjustment only	2 $\frac{7}{8}$ –1 $\frac{1}{2}$ in
Rear adjustment only	2 $\frac{7}{8}$ –1 $\frac{1}{8}$ in
Both adjustments	2 $\frac{7}{8}$ – $\frac{1}{8}$ in
Maximum cutting depth at 45°	1 $\frac{3}{4}$ in
Overall length	12 $\frac{1}{2}$ in
Overall width	9 $\frac{1}{8}$ in
Overall height	10 $\frac{7}{8}$ in
Net weight	10 $\frac{3}{4}$ lbs
Saw blade diameter	7 $\frac{3}{8}$ in

CHAPTER 2

OPERATING INSTRUCTIONS

Section I. SERVICE UPON RECEIPT OF SAW

7. General

a. When a new or reconditioned portable electric saw is received by the using organization, it is the responsibility of the officer in charge to determine whether the materiel has been properly prepared for service by the supplying organization and to be sure it is in condition to perform its function. For this purpose, inspect all assemblies and equipment to be sure they are properly assembled, secure, clean and thoroughly adjusted and/or lubricated.

b. Make a record of any missing parts, tools and equipment, and of any malfunctions. Correct any deficiencies as quickly as possible.

8. Services

a. *Uncrating.* Remove metal container from the cardboard carton. Remove the box wrench, the rip fence, the saw blade, and the saw assembly from the metal container.

b. *Cleaning.* Clean saw in accordance with pertinent instructions in paragraph 27.

c. *Lubrication.* See figure 3.

d. *Installation Procedure.*

(1) Connect saw to correct power source (par. 6).

(2) Secure green ground wire to the proper outlet in the receptacle if necessary, to water pipe, conduit, metal frame of a building, or to an "artificial" ground such as a driven pipe or buried plate.

Warning: It is particularly important that the ground wire be connected to a ground when there is presence of water in the work area. Proper grounding of the saw will prevent possible injury to the operator in the event the internal wiring should become grounded to the motor housing.

LUBRICATION ORDER

LO 5-4119

SAW, CIRCULAR WOODWORKING, PORTABLE, 115 OR 220 (AC OR DC) VOLT, 1 PHASE, 25-60 CYCLE, 7 1/4 INCH BLADE, BLACK AND DECKER MODEL 260

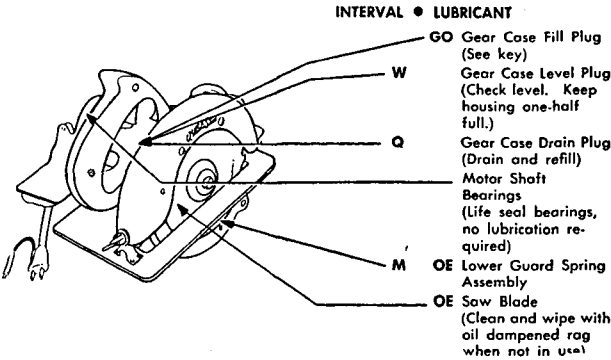
Reference: TM 5-4119

Intervals given are maximums for normal 8-hour day operation. For abnormal conditions or activities, intervals should be shortened to compensate. Clean fittings before lubricating.

Clean parts with SOLVENT, dry-cleaning, or OIL, fuel, Diesel. Dry before lubricating. Drain gear case only when hot after operation; replenish and check level when cool.

— KEY —

LUBRICANT	CAPACITY	EXPECTED TEMPERATURE			INTERVALS
		Above +32°F	+32°F to -10°F	Below -10°F	
OE—OIL, engine Heavy Duty		OE 30 or 9250	OE 10 or 9110	OE 10 or 9110	W—Weekly
GO—LUBRICANT Gear Universal		GO 90	GO 75	GO 5	M—Monthly
Gear Case					Q—Quarterly



NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW -10°F. Clean parts with SOLVENT, dry-cleaning and drain all oil housings. Relubricate with lubricants indicated in the key for below -10 F.

Copy of this Lubrication Order will remain with the equipment at all times; instructions contained herein are mandatory and supersede all conflicting lubrication instructions dated prior to the date of this Lubrication Order.

BY ORDER OF THE SECRETARY OF THE ARMY:

J. LAWTON COLLINS
Chief of Staff
United States Army

OFFICIAL:
WM. E. BERGIN
Major General, USA
The Adjutant General

Figure 3. Lubrication order.

e. Inspection.

- (1) Check the action of the lower guard by pulling the guard back and releasing it. The lower guard will spring forward if the guard spring is functioning properly.
- (2) After carefully connecting the saw to the proper source, press the on-off trigger switch to make sure it is functioning properly.

Section II. CONTROLS

9. General

This section describes, locates, illustrates and furnishes the operator with sufficient information pertaining to the various controls and instruments provided for proper operation of the saw (figs. 2 and 4).

10. Trigger On-Off Switch

The trigger on-off switch located in the pistol-grip handle (fig. 2) is squeezed to start the saw, held down to operate it, and released to stop the saw.

11. Adjustors

Three adjustors are used on the saw. One is located at the rear of the saw (fig. 1), and the other two are located at the front and left of the saw (fig. 2). Each adjustor can be used separately or in conjunction with each other. One front and rear adjustor controls the depth of cut while the remaining adjustor controls the angular degree of cutting. Each of the three adjustors can be set by loosening the particular wing nut and setting the saw to the desired position then locking the wing nut in position.

Section III. OPERATION UNDER USUAL CONDITIONS

12. General

This section contains instructions for the operation of the portable electric saw under conditions of moderate temperature and humidity. Every organization equipped with this saw must thoroughly train its personnel in the procedures for operating this saw.

13. Operation

a. *Installing Saw Blade (fig. 4).*

- (1) Disconnect the saw from power source.
- (2) Unscrew the hex head retaining screw with a $\frac{5}{16}$ -inch box wrench provided and remove outer clamp washer.
- (3) Lift lower guard clockwise into gear case and guard until small holes in each become aligned. Fit the small holding pin (fig. 4) in both holes to allow blade removal.
- (4) If saw is equipped with a blade, remove the saw blade off the inner clamp washer.
- (5) Install the properly selected blade.
- (6) Position the outer clamp on the saw blade and secure with a $\frac{3}{8}$ 24NF-2 x $\frac{7}{8}$ hex head screw.
- (7) Release lower guard.
- (8) Connect to proper power source and ground.

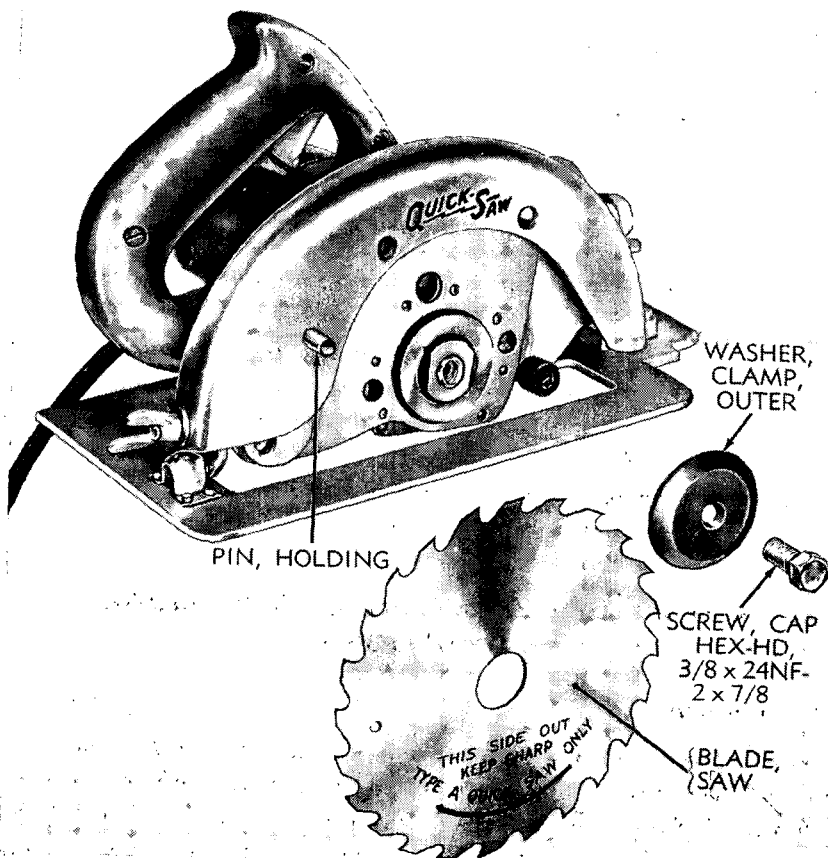


Figure 4. Method of installing or removing blade from saw.

b. Cross-Cut or Rip Sawing (figs. 5 and 6). Set the blade to the desired cutting depth (par. 11). Rest the “shoe” or base on the work and line up the blade with the cutting line.

Caution: Be sure that the blade teeth are not yet in contact with the work and that the lower blade guard is free.

Press the on-off trigger-switch and guide the saw through its cut with firm pressure but without forcing the feed. As the cut is completed, release the trigger switch and allow the blade to stop before lifting the saw from the work. If the rip fence (fig. 6) is to be used, install it on the left or right front end of the saw by sliding it into the bracket. Clamp it securely at the desired cutting width with the two wing screws and proceed as instructed above.

Note. If the saw stalls, do not release the trigger switch, but back the saw off the work until the blade momentum is regained.

Warning: Do not tie back the lower guard or attempt to move it while the saw is plugged into a power source. Violation of this warning may result in serious injury to operator.

c. Bevel Sawing (fig. 7). Set the saw to the desired depth and cutting angle (par. 11). Follow the note and warning in *b* above.

d. Pocket Cutting. Set the saw to the desired depth (par. 11). Rest the front of the “shoe” against the work and carefully draw back the lower guard before starting the motor. Lower the saw

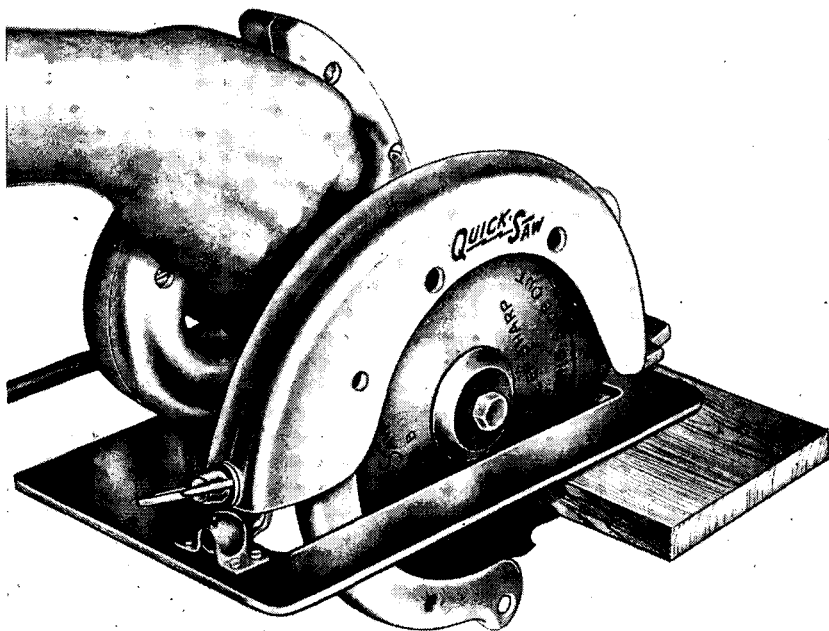


Figure 5. Cross-cut sawing.

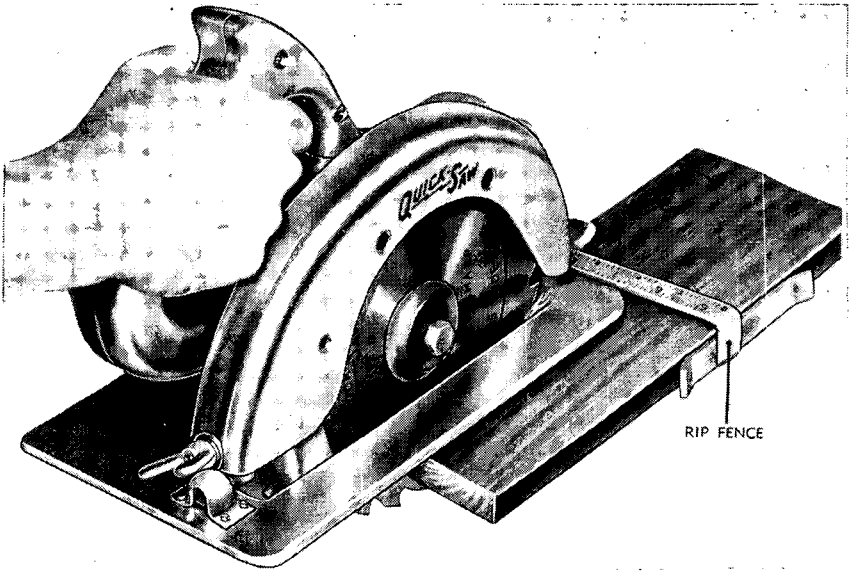


Figure 6. Rip sawing.

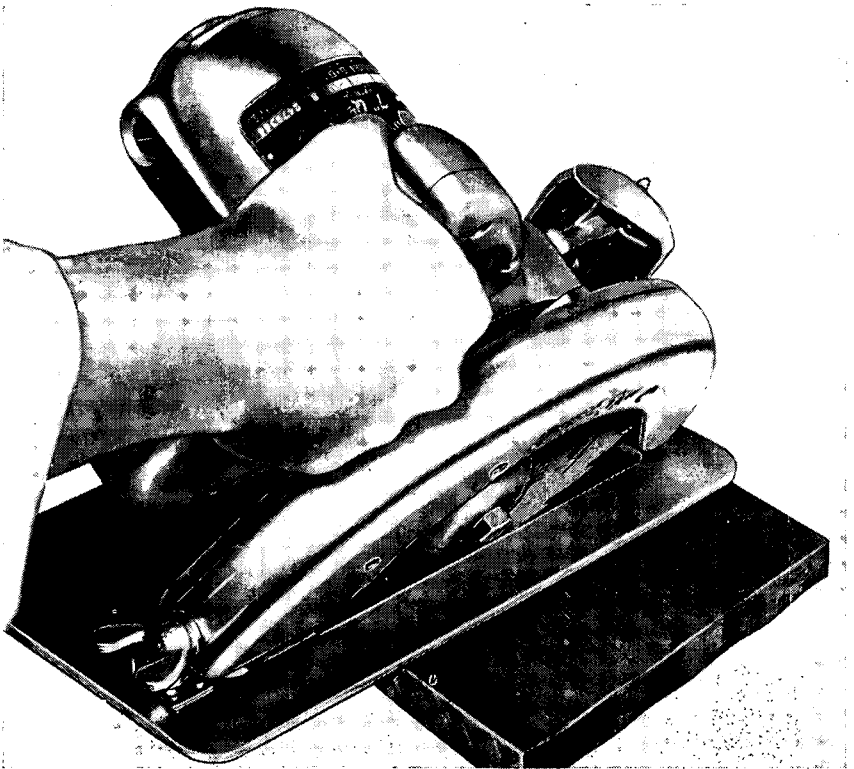


Figure 7. Bevel sawing.

until the blade teeth contact the cutting line lightly. Release the lower guard. Squeeze the on-off trigger switch and gradually lower the saw until the "shoe" rests flat on the work. Advance the saw along the cutting line as in normal sawing. When the cut is completed, release the on-off switch and allow the blade to stop before lifting the saw from the work. Follow the note and warning in *b* above.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

14. General

In addition to the normal operating procedures described in paragraphs 12 and 13 for usual conditions, special instructions for operating under unusual conditions are contained herein. In addition to the normal preventive maintenance services (pars. 26-28), special care in cleaning and lubrication must be observed where extremes of temperature, humidity, and atmospheric conditions are present. Proper cleaning, lubrication, and storage and handling of lubricants not only insure proper operation and functioning, but also guard against excessive wear of the working parts and deterioration of the materiel. Refer to paragraph 25 for proper lubricants to be used for operation under unusual conditions. See paragraphs 26-28 for appropriate maintenance procedures.

15. Operation in Extreme Cold

The saw will function normally down to such temperatures and accompanying atmospheric conditions as will permit the transmission of full voltage from the power source.

16. Operation in Extreme Heat

The saw will function normally in conditions of extreme heat, but care should be taken not to overload (forcing the feed too fast through work) the saw since this may introduce overheating of the motor.

17. Operation Under Dusty or Sandy Conditions

The saw will function normally in dusty conditions. However, the external surfaces of the saw should be wiped clean with a dry rag before and after use, taking care to keep the crevices around the chuck and drive spindle as clean as possible. With saw

running, frequently blow dry compressed air through all ventilator slots. This will eliminate dust accumulation on motor windings and moving parts, which if not removed may cause electrical grounding and/or extreme wear to movable parts. Keep covered when not in use.

18. Operation in High Humidity

The saw will function normally in high humidity. However, prior to sawing operations in very humid weather a warm-up period of from 4 to 5 minutes should be undertaken to dispel condensed moisture.

Warning: When placed in operation condensation within the saw can result in internal short circuits, which can transmit severe shocking to the operator. Therefore, check ground connection (par. 8) prior to operation.

CHAPTER 3

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. PARTS AND EQUIPMENT FOR OPERATION AND ORGANIZATIONAL MAINTENANCE

19. General

Equipment is issued to the using organization for operating the saw. Equipment should not be used for purposes other than prescribed, and when not in use, should be properly stored.

20. Parts

None supplied.

21. Common Tools and Equipment

Standard and commonly used tools having general application to this materiel are authorized for issue by pertinent T/O&E's.

22. Special Tools and Equipment

There are no special tools and equipment used for the maintenance of this saw.

23. Organizational Maintenance Responsibility

See Maintenance Allocation Chart issued by Chief of Engineers.

Section II. LUBRICATION

24. General Lubrication Instructions

a. See figure 3, Lubrication order.

b. *Reports and Records.* Report unsatisfactory performance of materiel or effect of prescribed lubricants and preserving materials, using DA Form 468.

25. Lubrication Under Unusual Conditions

See figure 3, Lubrication order.

Section III. PREVENTIVE MAINTENANCE SERVICES

26. General

a. Responsibility and Intervals. The primary function of preventive maintenance is to prevent breakdowns and, therefore, the need for repair. Preventive maintenance services are the responsibility of the using organization. These services consist generally of before-operation, during-operation, and after-operation services performed by the operator and the scheduled services to be performed at designated intervals by the organization mechanic. Intervals are based on normal operations. Reduce intervals for abnormal operations or severe conditions. Intervals during inactive periods may be extended accordingly.

b. Definition of Terms. The general inspection of each item applies also to any supporting member or connection and is generally a check to see whether the item is in good condition, correctly assembled, secure, and not excessively worn.

- (1) The inspection for "good condition" is usually an external visual inspection to determine whether the unit is damaged beyond serviceable limits. The term "good condition" is explained further by the following: not bent or twisted, not chafed or burred, not broken or cracked, not bare or frayed, not dented or collapsed, not torn or cut, not deteriorated.
- (2) The inspection of a unit to see that it is "correctly assembled" is usually an external visual inspection to see whether it is in its normal assembled position.
- (3) Inspection of a unit to determine if it is "secure" is usually an external visual examination or a check by wrench or hand for looseness. Such an examination must include any brackets, lock washers, lock nuts, locking wires, or cotter pins used.
- (4) By "excessively worn" is meant worn beyond serviceable limits or to a point likely to result in failure if the unit is not replaced before the next scheduled inspection.

27. Cleaning

a. General. Any special cleaning instructions required for specific mechanisms or parts are contained in the pertinent section. General cleaning instructions are as follows:

- (1) Use dry-cleaning solvent volatile mineral spirits paint thinner to clean or wash grease or oil from all metal parts of the saw.
- (2) Use carbon tetrachloride for cleaning all electrical parts.
- (3) Use clean water or a soap solution of one-fourth pound of soap chips to a gallon of hot water, to clean the rubber-covered cord.
- (4) After the cord has been cleaned, rinse and dry thoroughly. Take care to keep the cord clean.
- (5) Before installing new parts, remove any preservative materials such as rust preventative compound, protective grease, etc.

b. General Precautions in Cleaning.

- (1) Dry cleaning and volatile mineral spirits paint thinner are inflammable and should not be provided when these materials are used. Use only in well ventilated places.
- (2) The cleaners evaporate quickly and have a drying effect on the skin. If used without gloves, they may cause cracks in the skin, and in the case of some individuals, a mild irritation or inflammation.
- (3) Avoid getting petroleum products, such as dry-cleaning solvent or volatile mineral spirits paint thinner, engine fuels, or lubricants on rubber parts, as they will deteriorate the rubber.
- (4) The use of diesel fuel oil, gasoline, or benzine (benzol) for cleaning is prohibited.

28. Preventive Maintenance Services

a. Purpose. To insure efficient operation, it is necessary that the saw be systematically inspected at intervals each day it is operated, and weekly, so defects may be discovered and corrected before they result in serious damage or failure. Certain scheduled maintenance services will be performed at these designated intervals. Any defect or unsatisfactory operating characteristics beyond the scope of the operator or organizational mechanic to correct, must be reported at the earliest opportunity to the supporting engineer unit for correction. See paragraph 3.

b. Services. Operator's and organizational mechanic's preventive maintenance services are listed in table I. Every organization equipped with this saw must thoroughly train its personnel in performing the maintenance procedures for this materiel.

Table I. Organizational Preventive Maintenance Service

Intervals				Procedure
Before-operation	During-operation	After-operation	Weekly	
				<i>Usual Conditions</i>
X				Check power source for proper voltage (par. 6).
X				Check ground connection for proper installation (par. 8c(2)).
			X	Inspect cable for presence of oil, grease, etc. If present, clean (par. 29).
X				Check all exterior nuts for tightness. If loose, tighten.
			X	Blow dry compressed air through ventilator slots.
X				Check action of lower guard (par. 8c).
			X	Remove and inspect brushes (par. 33).
				<i>Unusual Conditions</i>
X				<i>Extreme cold.</i> Check for proper lubrication (par. 26).
X				<i>Dusty or sandy conditions.</i> With motor running, blow dry compressed air through all ventilator slots (par. 27d).
X				<i>High humidity.</i> Allow saw to warm up before use so as to expell any condensation.

Section IV. TROUBLE SHOOTING

29. General

Trouble shooting is a systematic isolation of defective components by means of reported trouble, probable cause, plus possible remedy. The possible remedies listed in this section are the more apparent remedies for troubles listed.

30. Procedure

The procedure to follow in correcting the trouble is to systematically isolate the cause and correct the trouble in accordance with the instructions in table II. If the correction is beyond the scope of the organizational maintenance functions, refer the trouble to engineer maintenance personnel.

Table II. Trouble Shooting

Trouble	Probable cause	Possible remedy
Saw fails to operate----	Cable disconnected.	Connect cable (par. 6).
	Plug not making proper contact in receptacle.	Straighten prongs of plug and reinsert in receptacle.
	Brush assembly defective.	Replace brush assembly (par. 32).
Saw slows down, then picks up speed.	Brush assembly sticking in brush holder.	Remove brush assembly and clean brush holder (par. 32).
	Defective cable connection.	Properly connect cable (par. 6). If necessary straighten out prongs on plug before inserting into receptacle.
	Brush assembly defective.	Replace brush assembly (par. 32).
Saw overheats during operation.	Brush assembly sticking in brush holder.	Remove brush assembly and clean brush holder (par. 32).
	Forcing the feed.	Use less pressure against the work.
	Improper ventilation.	Clean ventilator slots with compressed air.
Switch does not snap into on or off position.	Improper power source.	Connect to proper source (par. 6).
	Other causes beyond scope of using personnel.	Notify engineer maintenance personnel.
Commutator arcs excessively.	Brush assembly defective.	Replace brush assembly (par. 32).
	Brush assembly sticking in brush holder.	Remove brush assembly and clean brush holder (par. 32).
	Loose guard retaining screws and/or loose outer clamp screw.	Tighten screws as necessary.
Noisy operation-----		

Section V. MOTOR, FAN, AND MAIN DRIVE SPINDLE ASSEMBLY

31. Description and Data

When the saw is held in operating position, the motor, fan, and main drive spindle assembly are located directly to the left of the gear case guard and are enclosed in the field and switch case. The motor is equipped with two ball bearings and two brush

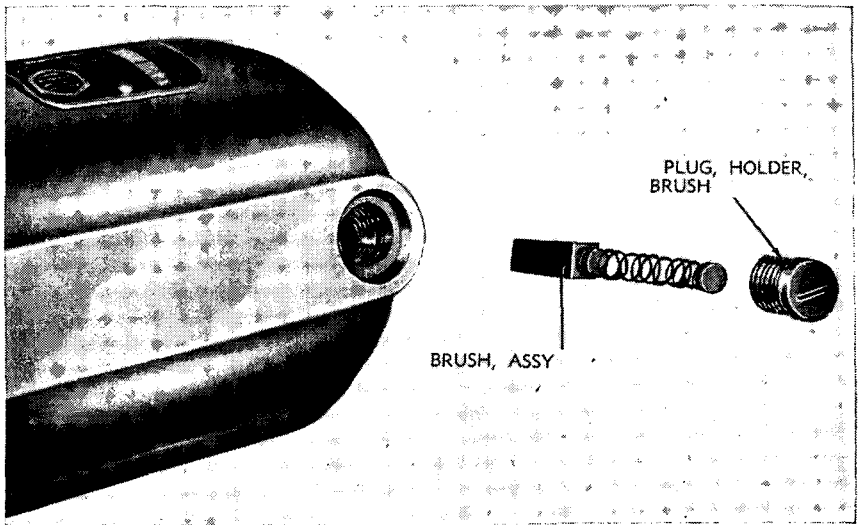


Figure 8. Motor brush assembly, exploded view.

assemblies. The motor is designed to operate on 115 to 220 volts, 10 ampere direct, or alternating current of 25 to 60 cycles. The motor power is transmitted through gears to deliver 4200 rpm without load.

32. Maintenance

a. *Brush and Brush Spring Removal.* Unscrew brush holder cap and pull out the brush spring assembly.

Note. The spring is an integral part of the brush. Do not remove from brush.

b. *Inspection and Cleaning.* If the brushes are chipped, cracked or measure three-eighths of an inch or less in length, replace. Replace brush assembly also if spring is badly bent or broken. Clean brush holders and brush assemblies with carbon tetrachloride and a clean cloth before installation (par. 29).

c. *Installation of Brushes.* Slide brush into slotted brush holder and screw in brush holder cap.

CHAPTER 4

FIELD AND DEPOT MAINTENANCE INSTRUCTIONS

Section I. INTRODUCTION

33. General

The instructions in this chapter are for the information and guidance of personnel responsible for field and depot maintenance. These instructions contain information on maintenance which is beyond the scope of the tools, equipment, or supplies normally available to using organizations. This chapter does not contain information for the using organization, since such information is available in other chapters of this manual.

34. Procedure

This chapter contains procedures for inspection, disassembly, repair, and assembly of the electric saw. The inspection procedures prescribed in this chapter consist of two types; i. e., in-process inspections for each component and final inspection for the complete saw. Trouble shooting information is included wherever applicable as a normal phase of inspection. In-process inspections are performed during the process of repairing components. Final inspection is performed after all repair has been completed and the item reassembled.

Section II. PARTS, SPECIAL TOOLS, AND EQUIPMENT FOR FIELD AND DEPOT MAINTENANCE

35. General

Tools and equipment over and above those available to using organizations will be supplied to engineer field and depot maintenance units for repairing the materiel.

36. Spare Parts

None supplied.

37. Special Tools and Equipment

Special tools and equipment, are listed in T/O&E's.

Section III. TROUBLE SHOOTING

38. General

Trouble shooting is a systematic isolation of defective components by means reported; trouble, probable cause, plus possible remedy. Through the use of the trouble shooting table, the specific defect or cause for the reported trouble of a component can often be determined without having to perform a complete series of general tests and inspections. Information given in table III supplements that given in paragraphs 29 and 30, trouble shooting performed at organizational level.

Table III. Trouble Shooting

Trouble	Probable cause	Possible remedy
Saw fails to operate----	Defective on-off trigger switch.	Replace (par. 60).
	Defective electric cord--	Repair or replace (par. 60).
Saw slows down, then picks up speed.	Shorted or grounded field coils.	Inspect (par. 57) and if necessary replace (par. 55).
	Shorted or grounded armature windings.	Inspect (par. 56) and if necessary replace (par. 57).
Saw overheats during operation.	Shorted or grounded field coil.	Inspect (par. 56) and if necessary replace (par. 57).
	Shorted or grounded armature winding.	Inspect (par. 56) and if necessary replace (par. 57).
Switch does not snap into on or off position.	Faulty switch-----	Replace switch (par. 60).
Commutator arcs excessively.	Pitted or scoring commutator segments.	Refinish (par. 56).
	Projecting mica-----	Undercut (par. 56).
	Commutator out of round.	Refinish (par. 56).
Noisy operation-----	Bent fan and/or worn bearings.	Replace fan and/or bearing as necessary (par. 57).

Section IV. LOWER GUARD ASSEMBLY

39. Removal

a. Slide inner clamp washer off spindle.

b. Loosen left, right, and pivot adjustor wing nuts so that the shoe moves free.

c. Insert a thin bladed screw driver under retaining ring and lift off of gear case cover.

d. Lift the lower guard out and down from spindle.

Caution: When the lower guard is lifted out and down, the lower guard and guard spring will become disengaged from it. Gentle but firm lifting is advised so as not to dislodge the spring from its seat in the gear case cover.

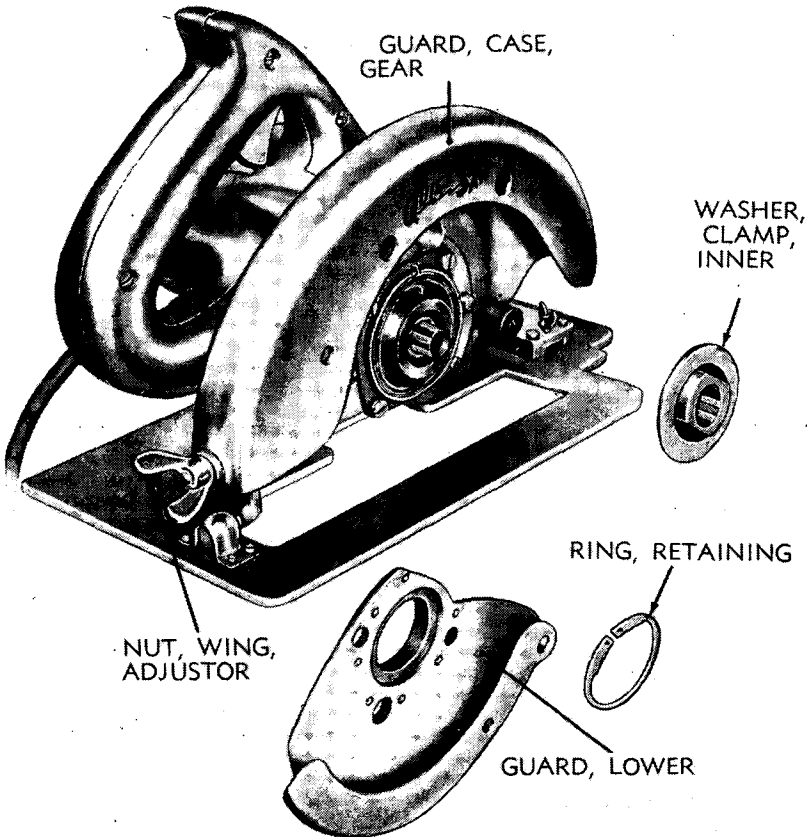


Figure 9. Lower guard and inner clamp, exploded view.

40. Inspection

- a.* Visually examine the lower guard for cracking. Replace if badly damaged.
- b.* Visually and by hand inspect the inner and outer surfaces of the inner clamp washer for wear or cracking. Replace if it is worn or otherwise damaged.

41. Installation

- a.* Slide lower guard up through shoe opening and over shoulder on gear case cover.
- b.* Using a thin bladed screw driver or similar tool insert the retaining ring over the gear case cover.
- c.* Slide the inner clamp washer over the spindle.

Section V. SHOE ASSEMBLY

42. Removal

- a.* Remove lower guard assembly (par. 39) so access can be had to left adjustor bolt (fig. 9).
- b.* Remove left adjustor and pivot wing nuts and washers (fig. 10).
- c.* Pull left adjustor bolt out of adjustment strap.
- d.* Pull left end of shoe downwards until adjustment strap is free of rubber stop.
- e.* Slide shoe to operator's right so that the pivot sleeve frees itself from pivot stud.

Note. Do not remove pivot bracket and adjustment strap retaining rivets unless these parts are to be replaced.

43. Inspection

- a.* Visually inspect all threaded parts for stripping or burring. Remove burs with a file where possible. Replace as necessary.
- b.* Visually inspect pivot sleeve shoe, and adjustment strap for signs of wear or cracking. Replace badly worn parts.
- c.* Inspect pivot sleeve and adjustment strap retaining rivets to make sure they are not loose. Replace as necessary.

44. Installation

- a.* Slide adjustment strap up between rubber stop and inside of gear case guard.

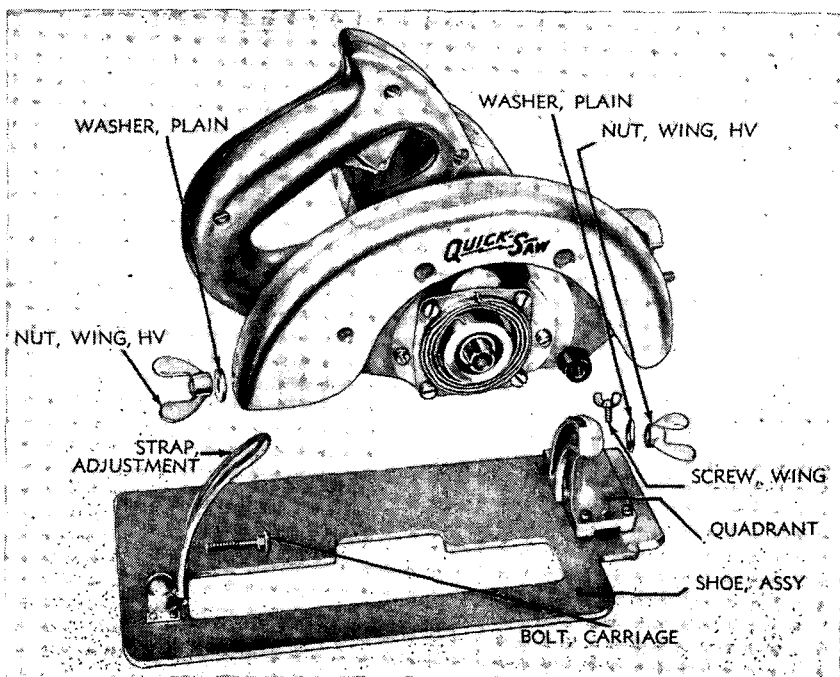


Figure 10. Shoe assembly, exploded view.

b. Pull the shoe as far to the operator's right as possible, without strain on the adjustment strap. Aline hole in pivot sleeve over pivot stud.

c. Insert a $\frac{1}{4}$ -20NC x $1\frac{1}{4}$ inch carriage bolt through adjustment strap and hole provided in gear case guard.

d. Place a $\frac{1}{4}$ -inch flat washer and a $\frac{1}{4}$ -20NC wing nut on carriage bolt and pivot stud and tighten nuts.

Section VI. SPINDLE ASSEMBLY

45. Removal

a. Remove the four gear case cover retaining screws and lock washers.

b. Pull out the spindle assembly.

46. Disassembly

a. Slide gear case cover off the spindle.

b. Using suitable bearing pullers, remove the two ball bearings from the spindle.

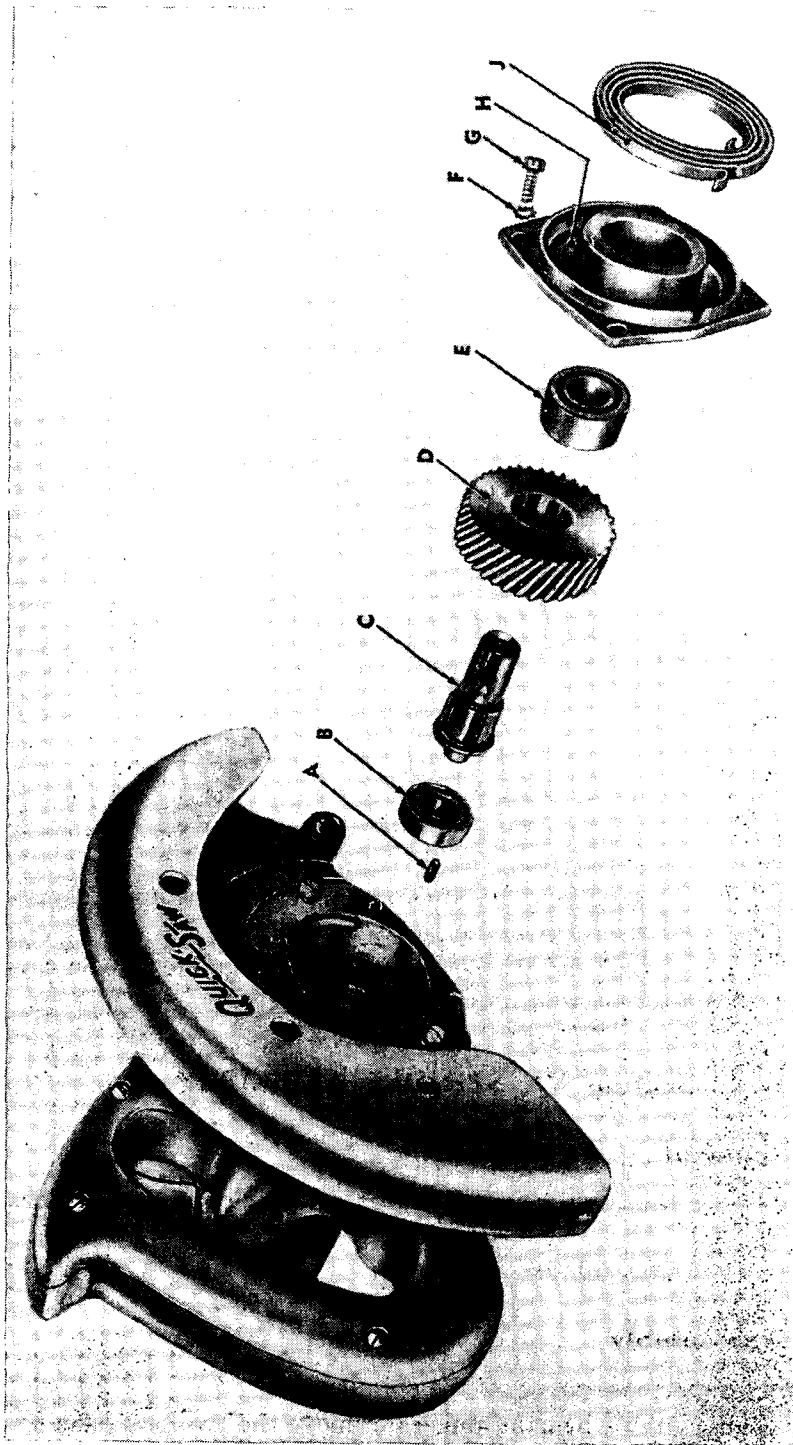


Figure 11. Spindle assembly, exploded view.

A—Plug, rubber
B—Bearing, ball, sealed
C—Spindle
D—Gear, spindle
E—Bearing, ball, sealed
F—Washer, lock, ext-teeth, No. 10 (0.190)
G—Screw, mach, fil-hd, No. 10 (0.190)–32NF–2 x ½
H—Cover, case, gear
J—Spring, guard, lower

Figure 11—Continued.

c. Slide spindle gear off the spindle.

d. If the spring needs to be removed, place a piece of wood or other suitable material over the lower guard spring in the gear case cover. Hold down with hand and pry spring end out of slot in gear case cover. Allow the spring tension to be released before removing board.

Note. Caution mentioned in paragraph 39d applies here. It is not necessary to remove the lower guard spring unless it is to be cleaned or replaced.

47. Inspection

a. Clean and inspect the sealed ball bearings.

b. Inspect all machined surfaces for wear, burring, or pitting. Pay particular attention to spindle and spindle gear splines. Remove burring and pitting where possible with crocus cloth or if necessary smooth finishing file. Replace as needed.

c. Hand test the lower guard spring for tension if removed. Replace if badly bent or weak.

d. Visually inspect screws and spindle threads for burring or stripping. Remove burs with a smooth finishing file. Replace as needed.

e. Visually inspect spindle gear for broken or cracked teeth. Replace if damaged.

48. Assembly

a. Press ball bearing on short end of spindle.

b. Slide on spindle gear and press ball bearing on other end of spindle.

c. If lower guard spring has been removed, hook end of spring into slot in outer ring of gear case cover. Wind spring around inside of outer ring until the spring is correctly seated in the recess of gear case cover.

Caution: When handling the gear case cover with spring installed be careful not to hit it sharply against any object as this may dislodge the spring and cause injury to the operator.

- d. Slide gear case cover on spindle.
- e. Lubricate in accordance with paragraph 24.

49. Installation

- a. Slide spindle assembly into position in gear case guard.
- b. Secure with four No. 10 external teeth lock washers and four No. 10-32NF x 1/2 inch fillister head machine screws.
- c. Install lower guard assembly (par. 41).

Section VII. GEAR CASE GUARD AND PIVOT BRACKET ASSEMBLY

50. Removal

- a. Remove shoe assembly (par. 42).
- b. Remove lower guard assembly (par. 39).

Note. In order to remove the gear case guard it is not necessary to remove the spindle assembly unless the gear case guard is to be replaced.

- c. Remove the four gear case guard retaining screws and lock washers and pull off the guard.
- d. Remove the pivot bracket wing nut and washer.
- e. Pull out the pivot bracket carriage bolt and remove the pivot bracket.

51. Disassembly

Remove the screw from the lower guard rubber stop.

52. Inspection

- a. Visually inspect the gear case guard and the pivot bracket for cracking. Replace, if badly damaged.
- b. Visually inspect all threaded parts for burring or stripping. Chase the threads or replace if necessary.
- c. Visually inspect the rubber stop for wear or tearing. Replace if badly worn.

53. Assembly

Insert the bumper screw into the rubber stop and screw into gear case guard.

54. Installation

a. Slide pivot bracket into position on pivot bracket mount with calibrated face of bracket away from gear case guard.

b. Insert a $\frac{1}{4}$ -20NC x $2\frac{1}{2}$ -inch carriage bolt into either the upper or lower slot in the pivot bracket mount from gear case side and secure in place with one $\frac{1}{4}$ -inch flat washer and one $\frac{1}{4}$ -20 wing nut.

c. Secure gear case guard in position to field and switch case with four No. 10 lock washers and four No. 10-32NF x 1 inch fillister head machine screws.

d. Install spindle assembly (if removed), (par. 49).

e. Install shoe assembly (par. 44).

f. Install lower guard assembly (par. 41).

Section VIII. MOTOR ASSEMBLY

55. Removal

a. Remove the lower guard assembly (par. 39).

b. Remove the shoe assembly (par. 42).

c. Remove the spindle assembly (par. 45).

d. Remove the gear case guard (par. 50).

e. Unscrew the brush holder caps and remove the brush assemblies (fig. 13).

f. Unscrew the brush holder set screws and remove the brush holders.

g. Unscrew the two retaining screws and lock washers securing the motor field to the field case.

h. Remove the four switch handle cover screws and lock washers and remove cover (fig. 20).

i. Remove the field leads from the on-off trigger (fig. 19).

j. Pull the field leads through the hole leading to the on-off switch.

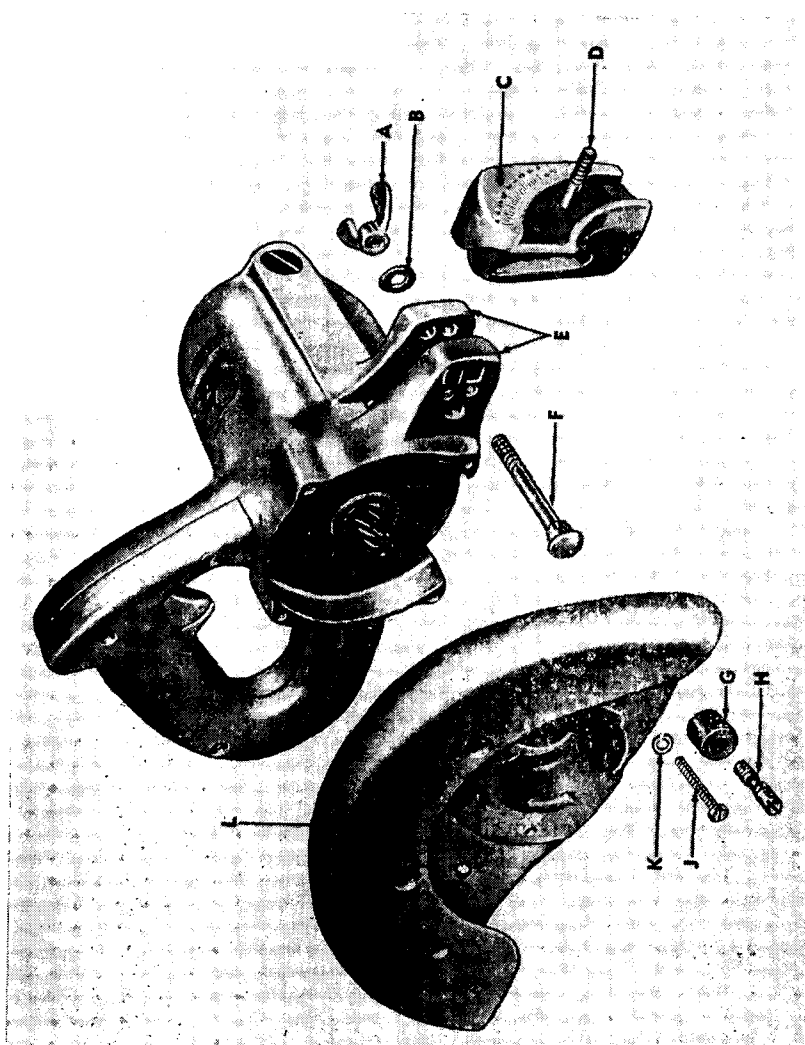
k. Turn the field and switch cover over on its open end and gently shake out the motor field.

Note. Keep hand over the motor field case opening to catch the field as it slides out.

56. Disassembly

(fig. 13)

a. Remove thrust washer from bearing seat in field case.



- A—Nut, wing, hv, ¼-20NC-2
- B—Washer, plain, ¼-in
- C—Bracket, pivot
- D—Stud, pivot
- E—Mount, bracket, pivot
- F—Bolt, carriage, rd-hd, sq-nk, ¼-20NC-2 x 2½
- G—Bumper, rubber
- H—Screw, mach, fil-hd, No. 10-32NF-2 x 1
- J—Screw, mach, fil-hd, No. 10-32NF-2 x 1
- K—Washer, lock, med
- L—Guard, case, gear

Figure 12. Gear case guard and pivot bracket, exploded view.

b. Using a suitable bearing puller remove inner and outer armature ball bearings.

Caution: Do not remove fan unless it is to be replaced, as the fan is made of soft metal and can very easily be bent out of shape.

57. Inspection

a. Inspect all threaded and geared parts for burring, stripping, or broken teeth. Chase or, if necessary, replace defective parts.

b. Inspect brushes in accordance with paragraph 32b.

c. Visually inspect thrust washer for wear. Replace if worn or if shield is badly bent.

d. Visually inspect field brush terminals to determine whether springs are sprung. Replace field brush terminals if they are bent or sprung.

e. Remove and replace fan if blades are badly bent or torn.

f. Visually and by hand inspect field and switch case for cracking. Replace if cracked or otherwise damaged.

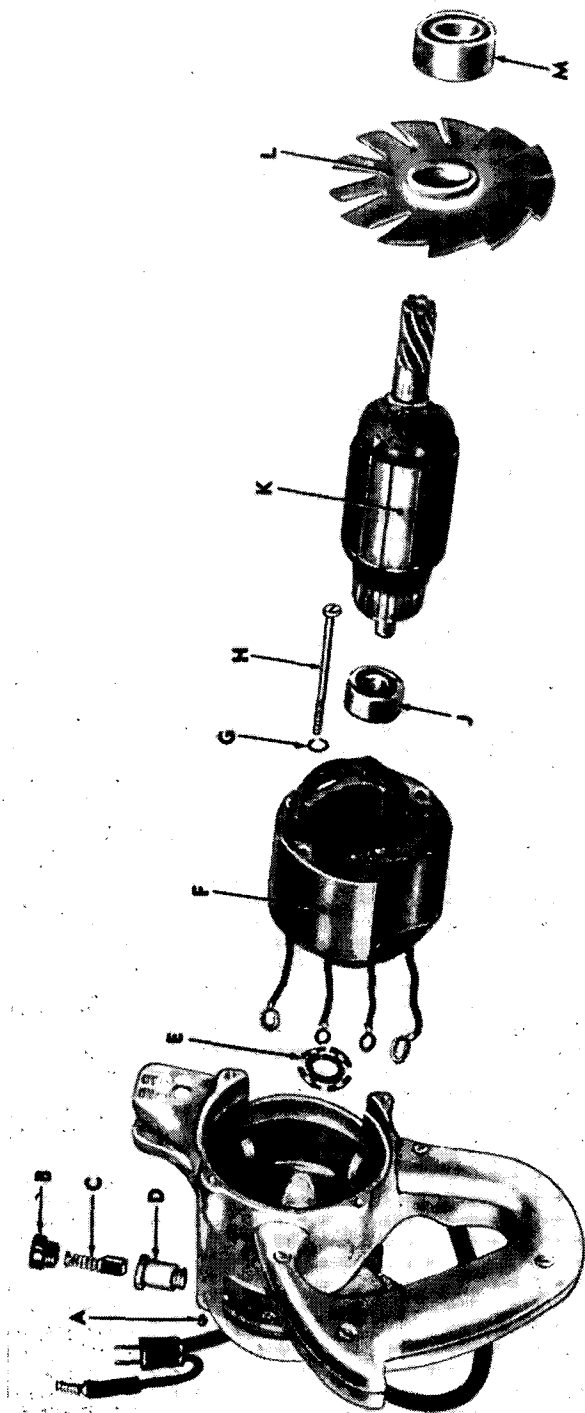
g. Clean and inspect the inner and outer armature bearings. Lubricate in accordance with instructions in paragraph 24.

h. Inspect armature to make sure all coils are properly pressed into core slots and are soldered to commutator risers. Replace armature if windings are loose or unsoldered to the commutator.

i. Test for the armature being grounded by placing armature in V block of armature growler. Turn on test lamp switch and touch one test probe to shaft or core and other probe to each commutator segment in turn (fig. 14). If ground is present, lamp will light. Replace armature if grounded.

Note. The armature shown on figures 14 through 18 is not the armature used in this electric saw. However, the procedures for testing and repairing are similar.

j. Test the armature commutator for open circuit by placing the two growler probes to each pair of adjoining commutator segments. Repeat this test on every pair of adjoining segments. Replace the armature if an open circuit is present as indicated by a zero reading on gage. To test armature core for short circuits (fig. 15), hold the growler thin steel strip near core. Rotate armature slowly through a complete revolution. If a short is present, steel strip will become magnetized and attracted toward the armature. Turn switch off before removing armature. Replace armature if shorted.



- A—Screw, set, hdls, fl-pt, No. 10-32NF-3 x $\frac{1}{8}$
- B—Plug, holder, brush
- C—Brush, assy
- D—Holder, brush
- E—Washer, thrust
- F—Field, assy

- G—Washer, lock, med
- H—Screw, mach, fl-hd, No. 10-24NC-2 x $2\frac{1}{2}$
- J—Bearing, ball, sealed
- K—Armature
- L—Fan
- M—Bearing, ball, sealed

Figure 18. Motor assembly, exploded view.

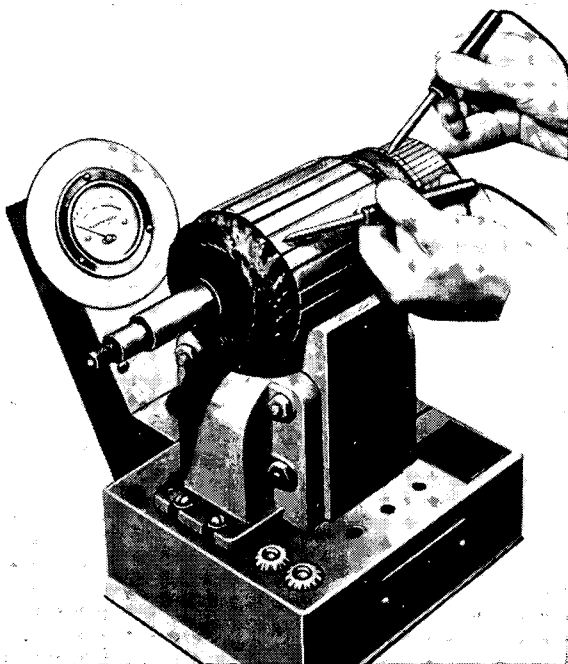


Figure 14. Method of testing for grounds using growler.

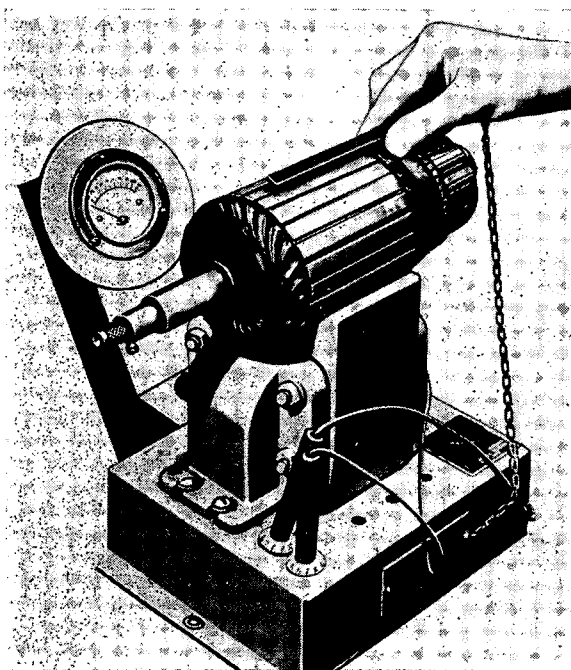


Figure 15. Method of testing armature for shorts using growler.

k. Place armature with shaft bearing seats on V blocks and mount a dial indicator with plunger against commutator (fig. 16). Rotate armature and measure total out of round. If the difference between the maximum and minimum dial readings is greater than 0.001 inch turn down commutator.

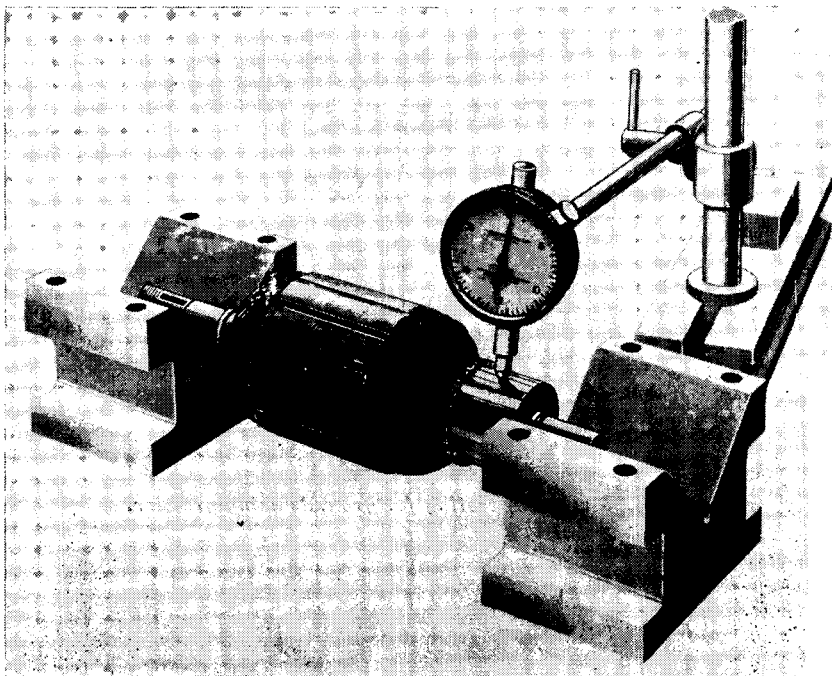


Figure 16. Method of measuring commutator out-of-round.

l. Inspect commutator for excessive pitting, scoring or for out-of-round (*k* above). Remove the burrs on the commutator with 2/0 flint paper (fig. 17). Discard the armature if the diameter of the commutator is less than 1.001 inches.

m. If inspection reveals that mica projects above commutator segment, use an undercutter (fig. 18).

n. Check each motor field for grounds using a test lamp. Connect the lamp in series with a 2 to 6 volt source of power and the trigger switch and brush holder leads of the coil (fig. 19). If field is grounded, the lamp will not light. Replace the motor field if it is grounded.

58. Assembly

a. Insert the brush holder into each side of field and switch case.

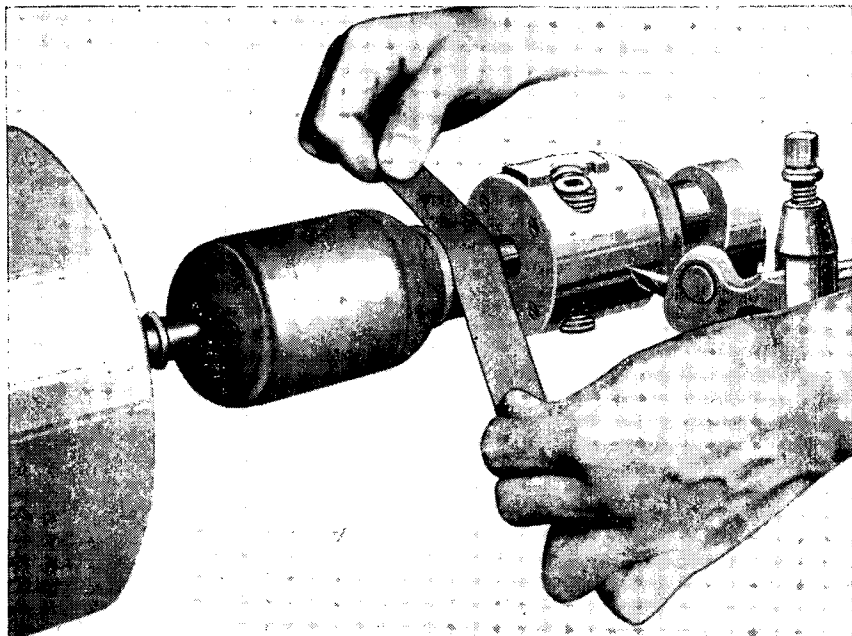


Figure 17. Removing commutator burrs with 2/0 flint paper.

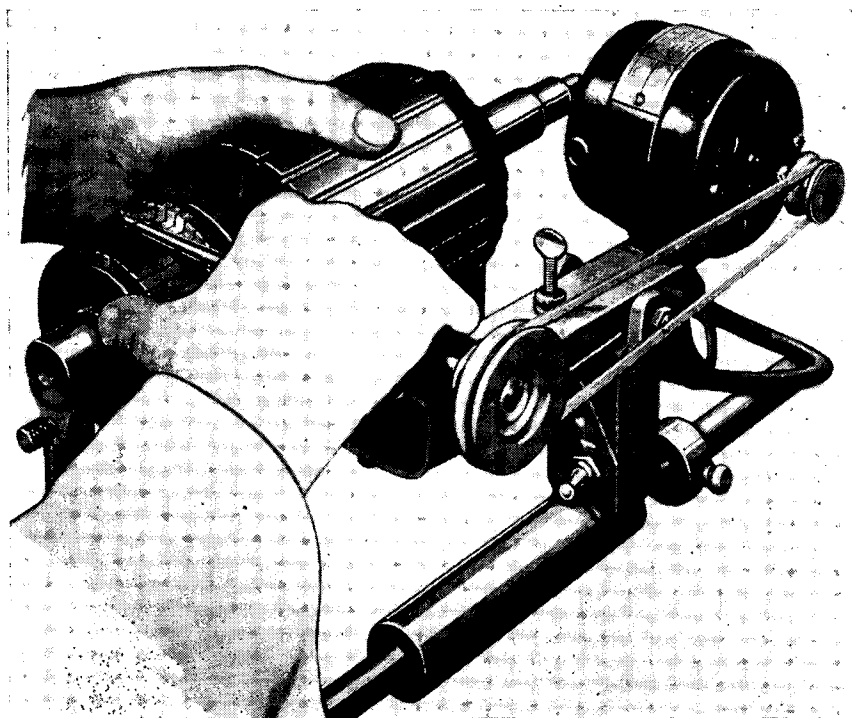


Figure 18. Undercutting commutator mica with undercutter.

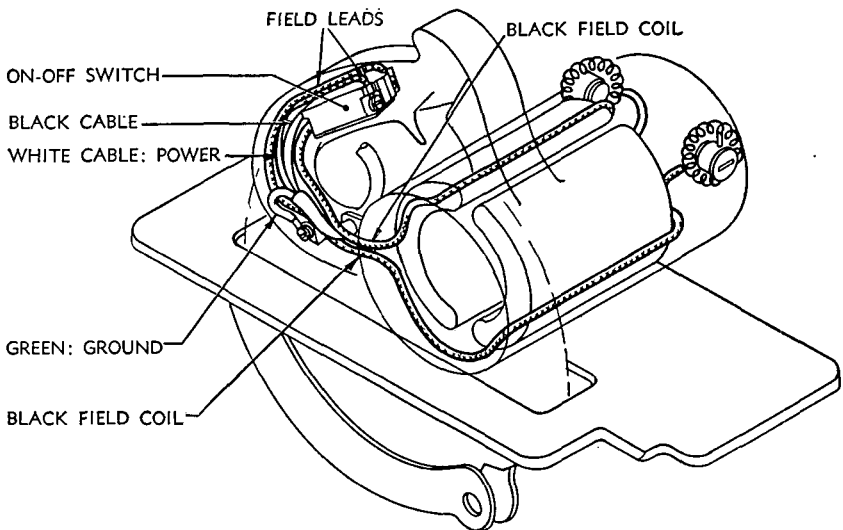


Figure 19. Test diagram for motor field.

b. Place the thrust washer on the bearing seat inside the field case.

c. Slip field brush terminals over the inside ends of the brush holders (fig. 19).

d. Place the field in an attaching position, lining up the screw holes in the field with the holes in the field and switch case.

e. Run field switch leads back over field so that the terminal ends can be inserted in the hole in the left inside of the field and switch case (fig. 19).

f. Slide field into position inside of field and switch case.

g. Secure field to field and switch case with two No. 10 lock washers and two No. 10-24NC x 2½ inch fillister-head machine screws.

h. Press front and rear armature bearings and fan (if removed) onto armature shaft.

59. Installation

a. Pull field leads into switch case and secure on on-off switch (figs. 19 and 20) with two No. 6 lock washers and two No. 6-32 x ¼ inch round head screws.

b. Install switch handle cover on field and switch case (fig. 20) with four No. 10 lock washers and four No. 10-32NF x ⅝-inch fillister-head screws.

- c. Slide armature unit into field.
- d. Secure brush holders with two No. 10-32NF x $\frac{5}{16}$ inch headless set screws.
- e. Slide brush assemblies into brush holders and screw in brush holder caps.
- f. Install gear case guard assembly (par. 54).
- g. Install spindle assembly (par. 49).
- h. Install shoe assembly (par. 44).
- i. Install lower guard assembly (par. 41).

Section IX. SWITCH AND CORD ASSEMBLY

60. Removal

- a. Remove the top three switch handle cover retaining screws and lock washers.
- b. To remove the lower switch handle retaining screw proceed as follows:
 - (1) Rotate lower guard as far as possible clockwise until the hole in the lower guard lines up with a hole in the gear case guard, through which the remaining switch handle retaining screw is visible.
 - (2) Insert a thin bladed screw driver into the lined up holes and remove the switch handle retaining screw and lock washer.
- c. Remove switch handle.
- d. Remove field and cord leads from switch and remove ground lead from stud below on-off trigger switch.
- e. Remove two on-off switch retaining screws.
- f. Lift out switch and insulator, and slide off insulator.
- g. Using a suitable dowel or brass rod, tap out cord bushing.
- h. Remove cord leads from switch.

61. Inspection

- a. Visually inspect all threaded parts for burring or stripping. Chase threads or, if necessary, replace defective part.
- b. Visually inspect switch handle and switch handle cover for cracking. Replace if damaged.
- c. Replace insulator if torn.
- d. Check the spring action of the switch to see that it snaps open and closed. If defective, replace switch.

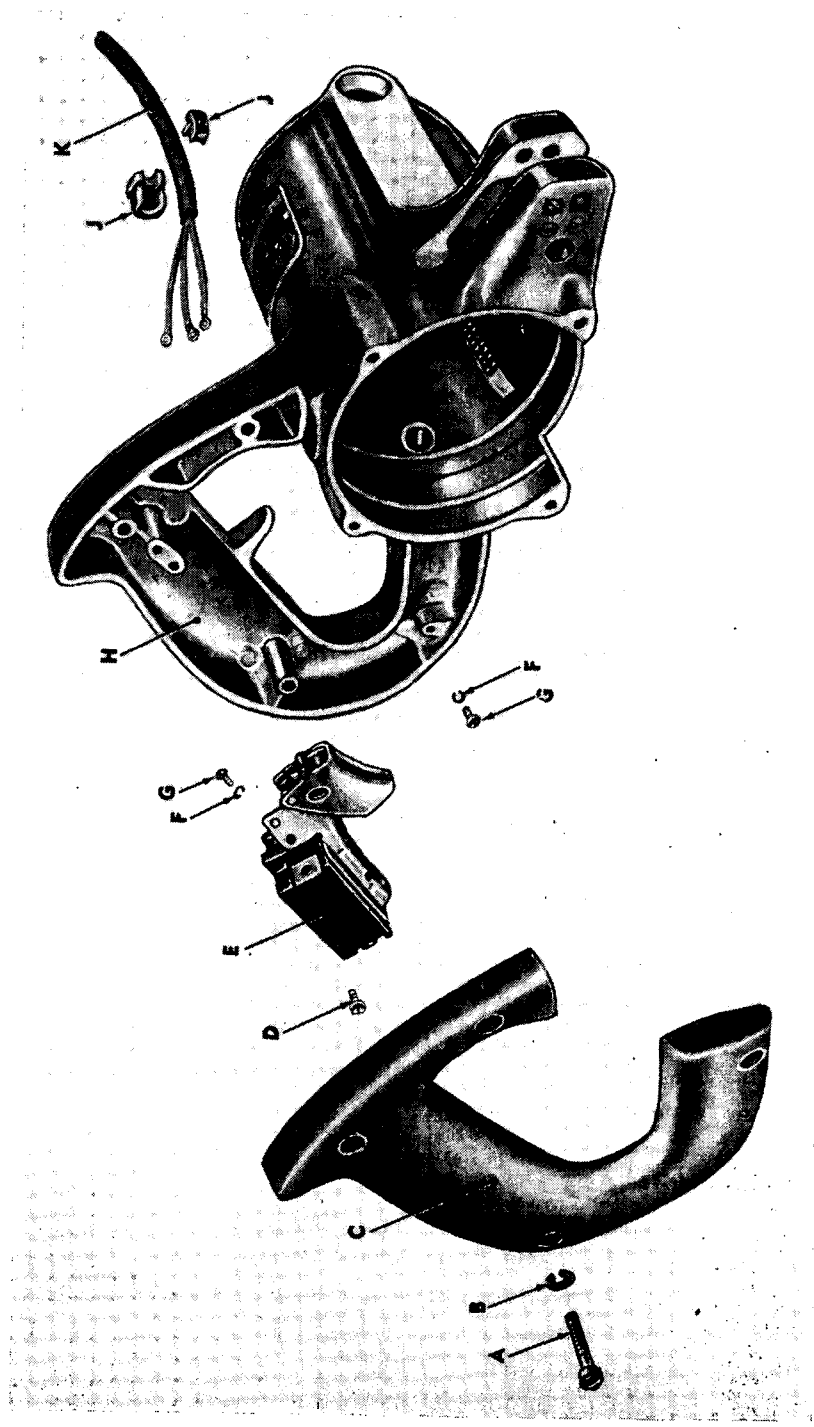


Figure 20. Switch and cord assembly, exploded view.

- A—Screw, mach, fil-hd, No 10-32NF-2 x $\frac{5}{8}$
- B—Washer, lock, med, No. 10
- C—Cover, handle, switch
- D—Screw, mach, rd-hd, No 8-32NC-2 x $\frac{1}{4}$
- E—Switch, assy
- F—Washer, lock, med, No. 8
- G—Screw, mach, fl-hd, No 8-32NF-2 x $\frac{1}{4}$
- H—Case, field and switch
- J—Bushing, cord
- K—Cord, assy

Figure 20—Continued.

e. Clean (par. 27) and inspect the cord and switch field leads for breaks, kinks, or deterioration caused by oil, grease, etc. Replace cord or field leads if necessary.

f. Clean the cavity of the handle in accordance with instructions in paragraph 27.

g. Clean cord ends in accordance with instructions in paragraph 27.

h. Inspect the cord for excessive wear. If the rubber insulation is cracked, or shows other apparent injury to conductors, replace with a new cord.

62. Assembly

a. Place insulator in on-off switch cavity.

b. Install on-off switch and secure with two No. 8 lock washers and two No. 8-32NC x $\frac{1}{4}$ inch round-head screws.

c. Place the cord bushing on the cord.

d. Install the cord bushing, with the cord secured there-in, into the cord hole of the switch handle.

e. Connect the field and cord leads as shown in figure 18.

f. Secure the switch handle cover with four No. 10-32NF x $\frac{5}{8}$ inch fillister-head screws and four No. 10 lock washers.

Section X. FINAL INSPECTION

63. General

Final inspection is performed after all repairs have been completed and the materiel has been reassembled. It includes a general visual inspection for proper assembly of the materiel; and a functional check to make sure that the saw is in working condition and is functioning properly.

64. Inspection

- a.* Check to see that all components of the saw are properly fitted together and all external screws are tight.
- b.* Check the action of the on-off trigger switch (par. 59*d*).
- c.* Check for play in gear system (par. 47).
- d.* Connect the cord to a suitable power source (par. 6) and operate the trigger switch to start the saw. Check for smoothness of running. If the saw fails to start, refer to paragraphs 30 and 38 for possible causes and corrections.

CHAPTER 5

SHIPMENT AND STORAGE AND DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE

Section I. SHIPMENT AND STORAGE

65. Shipping Instructions

a. Domestic Shipping Instructions.

- (1) *Preparation.* When shipping the portable electric wood-working saw interstate or within the zone of interior, the officer in charge of preparing the shipment will be responsible for furnishing saws to the carriers for transport in a serviceable condition properly preserved, packaged and packed (par. 67).

Note. Personnel withdrawing electric saws from a limited storage status for domestic shipment must not open cartons that have been previously inspected and packed Method II. If it is determined that the Method II Pack has been opened or damaged, saws must be inspected to insure that they are complete and serviceable and repacked in accordance with paragraph 67.

- (2) *Shipping instructions.* Portable electric saws will be shipped in accordance with paragraph 68.

b. Oversea Shipping Instructions.

- (1) *Inspection.* Inspect saws destined for oversea use prior to shipment to determine their completeness and serviceability. Replace any defective units.

Note. It is not normally necessary to inspect units in sealed packages since they have been inspected for serviceability prior to packaging and during storage.

- (2) *Preparation for shipment to ports.* Prepare saws destined to ports of embarkation for oversea shipment the same as prescribed for domestic shipment. In addition a number of unit packs will be packed in a style 4 mailed wood box completely weatherproofed and strapped as prescribed in paragraph 67.

66. Storage Instructions

a. Limited Storage Instructions.

- (1) *Receiving inspections.*

- (a) Report all saws received for storage in a damaged condition or improperly prepared for shipment on DD

Form 6 in accordance with SR 745-45-5. Report of saws received in an unsatisfactory condition (chronic failure or malfunction of the unit) will be reported on DA Form 468 in accordance with SR 700-45-5.

- (b) Immediately upon receipt, electric saws that have not already been inspected and prepared for limited storage, must be given a limited technical inspection and processed, packaged and packed as prescribed in paragraph 67. The results and classification of saws will be recorded and packed with the unit.
 - (c) Perform a systematic inspection and replace or repair all missing or broken parts. If repairs are beyond the scope of the unit, causing the saws to be out-of-service for an appreciable length of time, store them in a limited storage status and attach a tag to them specifying the repairs needed. The report of these conditions will be submitted by the unit commander for action by an engineer maintenance unit.
- (2) *Inspection during storage.* Perform a visual inspection periodically to determine general condition as prescribed in *b* below. If the Method II Pack has been punctured or opened, repack in accordance with paragraph 67.
- (3) *Storage site.*
- (a) Personnel must carefully note the storage location to determine whether the location is adequate for the units involved.
 - (b) Store all portable electric saws in a humidity-controlled room where the moisture content of the air is kept to a low relative humidity and at an even temperature, whenever possible.
- (4) *Removal from limited storage.*
- (a) If the saws are not shipped or issued upon expiration of the 90 day limited storage period, they must be further inspected for stand-by or long-term storage as prescribed in *b* below.
 - (b) If the saws to be shipped will reach their destination within the scope of the limited storage period, they need not be reprocessed upon removal from storage unless inspection reveals it to be necessary according to anticipated in-transit weather conditions.
 - (c) Service electric saws in accordance with paragraphs 7 and 8 when it has been ascertained that they are to be placed into immediate service.
 - (d) Repair and/or replace all saws tagged in accordance with (1) (c) above.

b. Stand-By and Long-Term Storage.

(1) Maintenance in-storage inspection.

- (a)* Maintenance in-storage inspection must be performed by qualified engineer maintenance personnel.
- (b)* Inspection of units will preferably be performed in an area expressly set aside for that purpose, or in a maintenance shop when such facilities are available at an installation.

Note. Portable electric saws that have been packed "Method II" must not be removed from pack for percentage inspection. However, a visual inspection should be made of the Method II Pack. If pack is damaged or broken, materiel will be removed and processed, packaged and packed as prescribed in paragraph 67.

- (c)* Inspect at least 1 percent of units in storage annually. If results of the 1 percent inspection reveal defective units, then inspect 10 percent of the units. If additional defective units are discovered, then inspect the entire lot and place in a serviceable condition and repackage in accordance with paragraph 67.
 - (d)* When a 1 percent or 10 percent inspection proves satisfactory, select units not previously inspected for the next annual inspection.
- (2) Packaging.* Inspectors must carefully examine selected units for packaging, observing the following basic points.
- (a)* Condition of containers.
 - (b)* Legibility and accuracy of package markings.
 - (c)* Method of packaging (par. 67).

67. Processing, Packaging and Packing Instructions

a. Cleaning.

- (1)* It is of utmost importance that all items be spotlessly cleaned prior to the application of preservatives and packaging.

Note. During processing of items it is imperative that cloth or synthetic rubber gloves be worn while handling items. Do not apply solvent to interior parts of the electric motor, electric cord or to rubber items of any kind.

- (2)* Remove all shop dirt and other foreign matter (where necessary) from all metal surfaces (bare metal, painted or plated) by scrubbing with cloths soaked in dry-cleaning solvent or volatile mineral spirits, followed by wiping with clean, solvent-soaked cloths. When the solvent used for the first scrubbing operation becomes too dirty for further use, the solvent used for the second solvent wiping

operation must be used for the first scrubbing operation. Clean cloths must be soaked with clean solvent for the second wiping operation. Apply fingerprint remover oil (type A) and dry thoroughly with dry-compressed air provided with special moisture filter traps, infra-red lamps, heating oven, or by wiping the part with clean lint-free dry cloths.

b. Application of Preservatives.

- (1) Apply preservatives (where necessary) as soon as possible after cleaning operations *a* above.

Note. Do not apply corrosion preventives to interior parts of the electric motor, electric cord or to any rubber items of any kind.

- (2) Apply a coating of heated rust-preventive compound (medium) to unpainted metal surfaces of the unit and accessories.

c. Packaging. Wrap preserved portions of the box wrench rip fence and cover all openings of the electric saw with greaseproof barrier-material grade A, type I. Cushion all sharp or projecting parts of saw with creped cellulose wadding or similar cushioning material and pack in exterior shipping container as prescribed in *d* below to prevent free movement.

d. Packing (Method II Pack).

- (1) Pack the portable electric saw, box wrench, rip fence, and saw blades in the metal container furnished with unit. Locate bags of dehydrating agents within metal case and close cover immediately. Pack metal case within a corrugated (V3c-board) or a solid (V3s-board) fiberboard container properly cushioned to prevent free movement. Seal all seams of the carton with water resistant pressure-sensitive adhesive tape.

Note. To find the required quantity of desiccant to inclose within carton, the following formula should be used:

Area of carton (sq ft) $\times$ 0.1 + $\frac{1}{2}$ of dunnage (lbs)

- (2) Round off sharp corners of the carton with a mallet and place carton in a flexible water-vaporproof barrier-material. Form the barrier-material around carton forcing all excess air out with a vacuum pump, if available prior to final closure. All seams are to be heat sealed against moisture-vapor transmission.
- (3) Overwrap carton in a flexible waterproof barrier-material type C-1. All seams must be sealed by adhesives or tape. Apply identification label (nomenclature and stock number) and label specifying "Method II Pack."

- (4) The logistical shipping characteristics of the packaged carton is as follows:

Note. Before requisitioning a quantity of these cartons, a trial pack must be made.

Weight (net lbs) -----	10 $\frac{3}{4}$
Container dimensions: (OD)	
Length (in) -----	15
Width (in) -----	12
Height (in) -----	13
Volume (cu ft) -----	1.4
Bearing pressure (lb per sq ft) -----	14
Ship tons (40 cu ft) -----	0.04
Shipping weight (gross lbs) -----	17

- (5) For oversea shipment a number of unit packs will be packed in a nailed wood box. The gross weight of the loaded container must not exceed 200 pounds. The box will contain a flexible waterproof barrier case-liner, type L-2 (except for shipment to frigid zones). Make sure that all protruding nails are clinched and splinters removed from inside of box before installing case-liner in order not to puncture barrier-material. Before sealing top of case-liner, apply a plywood or corrugated cover for a firm sealing foundation. Properly seal all edges with adhesive waterproof sealing compound. Nail top of box on and apply the correct size and number of straps to exterior of container just prior to shipment.

e. Identification and Marking.

(1) *Domestic.*

- (a) After the unit has been packed, the standard marking information required to identify and mark containers for domestic shipment will be printed or stenciled directly onto the shipping container with the standard nomenclature; stock number or other identifying number; quantity and size; weight (WT); cubage (CU); package number (where required); domestic address label; caution labels and markings (where required), and date packed (month and year). Adjacent to the description of the contents the letters DOM PK will be stenciled or printed in letters 1 $\frac{1}{2}$ -inches high where possible, but never less than 1-inch.

Note. When the set markings, packing lists, special and technical data markings are necessary, they will be used and applied in accordance with specific instructions from the officer in charge.

- (b) Do not apply labels or mark containers unless the contents have been actually inspected and processed.

(2) *Oversea.*

- (a) For shipment to ports of embarkation for oversea shipment the container will be labeled or stenciled as prescribed for domestic shipment, (1) above, and in addition will include the oversea address and service color marking.
- (b) Each container shipped in less than carload lot (LCL) or less than truckload lot (LTL) to a port will also bear a domestic address. Old addresses and irrelevant data will be effectively removed or obliterated prior to shipment. A label not exceeding 28-inches (yellow corners not required on label) will be used for domestic addresses. Label will be securely attached to the container and covered with waterproof transparent protective coating cement. Stenciling of domestic addresses on containers is not permitted.

68. Loading and Blocking Instructions

For general loading rules and methods and procedures for loading and blocking boxed items in boxcars for rail shipment, refer to proper authority.

Section II. DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE

69. General

a. Destruction of the portable woodworking saw, when subject to capture or abandonment in the combat zone, will be undertaken by the using arm only when, in the judgment of the unit commander concerned, such action is necessary in accordance with orders of, or policy established by, the army commander.

b. The information which follows is for guidance only. Certain of the procedures outlined require the use of explosives and incendiary grenades which normally may not be authorized items of issue to the using organization. The issue of these and related materials, and the conditions under which destruction will be effected, are command decisions in each case, according to the tactical situation. Of the several means of destruction, those most generally applicable are:

Mechanical—Requires axe, pick mattock, sledge, crowbar, or similar implement.

Burning —Requires gasoline, oil, incendiary grenades, or other inflammables, or welding, or cutting torch.

*Demolition —Requires suitable explosives or ammunition.

*Gunfire —Includes artillery, machine guns, rifles using rifle grenades, and launchers using antitank rockets. Under some circumstances hand grenades may be used.

Disposal —Requires burying in the ground, dumping in streams or marshes, or scattering so widely as to preclude recovery of essential parts.

In general, destruction of essential parts, followed by burning will usually be sufficient to render the materiel useless. However, selection of the particular method of destruction requires imagination and resourcefulness in the utilization of the facilities at hand under the existing conditions. Time is usually critical.

c. If destruction to prevent enemy use is resorted to, the materiel must be so badly damaged that it cannot be restored to a usable condition in the combat zone either by repair or cannibalization. Adequate destruction requires that all parts essential to the operation of the materiel, including essential spare parts, be destroyed or damaged beyond repair. However, when lack of time and personnel prevents destruction of all parts, priority is given to the destruction of those parts most difficult to replace. Equally important, the same essential parts must be destroyed on all like materiel so that the enemy cannot construct one complete unit from several damaged ones.

d. If destruction by demolition or gunfire is directed, due consideration should be given to the observance of appropriate safety precautions.

70. Destruction of the Portable Woodworking Saw

a. Method No. 1, by Mechanical Means.

- (1) Disconnect the saw from its source of electricity. Using an axe, pick mattock, sledge, or other heavy implement, smash the electric motor, trigger switch, sleeve and bracket, guard, and saw blade.
- (2) Destroy the electric cord by cutting it into short lengths. Elapsed time: about 3 minutes.

b. Method No. 2, by Burning.

- (1) Disconnect the saw from its source of electricity. Using a cutting or welding torch, burn through the electric

* Generally applicable only when the saw is to be destroyed in conjunction with other equipment.

motor housing and destroy the wiring. Burn through the handle housing and destroy the trigger switch. Elapsed time: about 3 minutes.

- (2) In the absence of a welding or cutting torch, place the saw on a pile of combustible. Pour gasoline over the combustible and saw. Ignite and take cover. A hot fire is required to render the materiel useless.

Caution: When igniting the gasoline, due consideration should be given to the highly inflammable nature of gasoline and its vapor. Carelessness in its use may result in painful burns.

Elapsed time: about 3 minutes.

c. *Method No. 3, by Disposal.* Bury the saw in a suitable hole or throw it into a stream. Elapsed time: about 2 minutes.

APPENDIX

REFERENCES

1. Dictionaries of Terms and Abbreviations

- SR 320-5-1, Dictionary of United States Army Terms.
SR 320-50-1, Military Terms, Abbreviations, and Symbols.

2. Lubrication and Painting

- TM 9-2851, Painting Instructions for Field Use.

3. Preparation for Export Shipment

- TB 5-9711-1, Preparation of Corps of Engineers Equipment for Oversea Shipment.
TB 5-9713-1, Preparation for Export, Spare Parts for Corps of Engineers Equipment.

4. Publications Indexes

- SR 110-1-1, Index of Army Motion Pictures and Kinescope Recordings and Film Strips.
SR 310-20-3, Index of Army Training Publications.
SR 310-20-4, Index of Technical Manuals, Technical Regulations, Technical Bulletins, Supply Bulletins, Lubrication Orders and Modification Work Orders.
SR 310-20-5, Index of Administrative Publications.
SR 310-20-6, Index of Blank Forms and Army Personnel Classification Tests.
ENG. 1, Introduction and Index, Department of the Army Supply Manuals.

5. Training Aids

- FM 21-8, Military Training Aids.

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